

performing a second annealing to convert the first-reacted silicide region into a second-reacted silicide region, by reaction of the supplemental silicon layer with the first-reacted silicide region,

wherein after the second annealing, a silicon layer remains between the second-reacted silicide region and the insulating layer.

24. A method for fabricating a semiconductor device, comprising:

providing a semiconductor substrate which has a silicon region located on a insulating layer formed in the semiconductor substrate;

forming a metal layer on the silicon region of the semiconductor substrate;

performing on a first annealing on the semiconductor substrate to form a first-reacted silicide region;

forming a supplemental silicon layer on the first-reacted silicide region;

doping an impurity, which is a same conductive type as the silicon region, into the supplemental silicon layer; and

performing a second annealing to convert the first-reacted silicide region into a second-reacted silicide region, by reaction of the supplemental silicon layer with the first-reacted silicide region.